

56-4-43/52

AUTHOR: GRAMENITSKIY, I.M.; ZHDANOV, G.B.; ZAMCHALOVA, Ye.A.; SHCHERBAKOVA, M.N.
TITLE: Nuclear Interaction in a Photoemulsion at an Energy of 8.10^{13} eV.
(Yadernoye vzaimodeystviye v fotoemulsii pri energii 8.10^{13} eV.
Russian).
PERIODICAL: Zhurnal Eksperim. i Teoret. fizik., 1957, Vol 30, Nr 4, pp 936-938
(U.S.S.R.)

ABSTRACT: In a stack of baseless 600 μ thick photoemulsion of the type ILFORD G5 (which in 1955 was exposed to light for 6 hours in the Po Valley (?) at a height of 25,5 km) a nuclear interaction of the type $1 + 37 \alpha$ was discovered. The angular distribution of secondary charged particles was measured, on which occasion the small angles θ were calculated from the center of the axial symmetry of the narrow cone of the particle. In order to be able to obtain the angular distribution of the penetrating particles immediately in the center of mass system of the colliding particles, the order $\ln \tg \theta$ was chosen as the angular variable. The differential angular distribution obtained after averaging over three independent measurements is represented in a diagram. The necessary condition for the determinability of the primary energy (resulting) from the angular distribution is the symmetry of this distribution in the center of mass system with respect to the angle $\theta = \pi/2$. An examination of the angular distribution found here by means of the so-called χ^2 -test confirms the symmetry of this

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16-4-41/32
Nuclear Interaction in a Photoemulsion at an Energy of 8.10^{13} eV.
the average value \bar{p}_1 $2\mu c$ and a scattering of $\Delta p_1 \sim \bar{p}_1$ around
the average value. (1 illustration and 2 tables).

ASSOCIATION: Physical Institute "P.N. LEBEDEV" of the Academy of Science of
the U.S.S.R.

PRESENTED BY:

SUBMITTED: January 12, 1957

AVAILABLE: Library of Congress

Card 3/3

56-34-4-9/60

AUTHORS: Zhdanov, G. B.; Zamchalova, Ye. A.; Tret'yakova, M. I.;
Shcherbakova, M. N.

TITLE: The Nuclear Interaction in a Photoemulsion Accompanied by a
High Energy Transfer to the Electron-Photon Component
(Yadernoye vzaimodeystviye v fotoemul'sii, soprovozhdayu-
shcheyesya vysokim vydeleniyem energii v elektronofotonnyu
komponentu)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958,
Vol. 34, Nr 4, pp. 843 - 848 (USSR)

ABSTRACT: This work exactly investigates a case of a nuclear interaction
in which at a primary energy of 250 ± 250 BeV one of the
neutral pions carries off an energy of ~ 200 BeV. The authors
developed a nuclear interaction of the type $1 + 12$ n with
a very high proportion of the energy transferred to the elec-
tron-photon component in a stack of supportless photoemulsions
Ilford G-5 which was exposed at a height of 25.5 km during
the Italian expedition by S. F. Powell (1955). The micro-
projection of the shower and of the subsequent electron cas-
cade are illustrated in a diagram. The angular distribution

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The Nuclear Interaction in a Photoemulsion Accompanied by a High Energy Transfer to the Electron-Photon Component

56-34-4-9/60

of the penetrating particles is almost isotropic in a system with the Lorentz factor $\gamma_0 \approx 7$. An estimate of the primary energy gives the value

$$E_0 = 250 \pm 250 \text{ BeV.}$$

This value, however, could be much lower, if the true angular distribution of the particles (in the center of mass system) differs fundamentally from a symmetrical distribution. The true value of E_0 seems to be hardly higher than 800 BeV. A table illustrates the distributions of the particles in the plane vertical to the cascade axis, found by the authors at three depths of the cascade shower ($t = 1.6; 3.1$ and 4.5 avalanche units). The spatial and energetic distributions of the electrons and of the pairs illustrated in 2 tables, allow an estimate of the total energy of the soft component, for which 4 methods can be used. The values thus obtained are composed in a table. Into the soft component at least 30 % of the total interaction energy are transferred. Also of interest is the considerably sharper concentration of the photons with high energy near the shower axis compared with the angular distribution of the penetrating particles.

Card 2/3

The Nuclear Interaction in a Photoemulsion Accompanied by a High Energy
Transfer to the Electron-Photon Component 56-344-9/60

The authors thank R. M. Grysunov, L. V. Kruglov, M. N. Pachkov
and Yu. F. Sharapov for their participation in the evaluation
of the experimental data, and Professor N. A. Dobrotin and
I. L. Rozenal' for the discussion of the obtained results.
There are 2 figures, 4 tables, and 6 references, 4 of which
are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev AS USSR)

SUBMITTED: November 26, 1957

1. Nuclear reactions--Analysis

Card 3/3

21(7)

SOV/56-37-3-6/62

AUTHORS: Zhdanov, G. B., Maksimenko, V. M., Tret'yakova, M. I.,
Shcherbakova, M. N.

TITLE: Nuclear Interactions of Protons With Energies of 8.7 Bev in
Photographic Emulsions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959,
Vol 37, Nr 3(9), pp 620 - 633 (USSR)

ABSTRACT: The authors investigated an emulsion pile, which had been
irradiated with 8.7 Bev protons at the synchrophasotron of the
OIIYaI (United Institute of Nuclear Research). The photographic
emulsions concerned were of the NIKFI-R type, which had a
thickness of 450 μ (27-30 grains/100 μ). For the purpose of the
present very detailed paper, about 25000 tracks with a total
length of \sim 300 m were evaluated. In chapter 1 the investiga-
tion results which make an evaluation of the inelastic inter-
action cross section possible are discussed and some of them
are given by two tables. Table 1 contains the ranges λ for two
forms of interaction: for star formation ($\lambda = 35.0 \pm 1.3$ cm) and
for "pure" scattering (1750 ± 500 cm) if the scattering angle

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Nuclear Interactions of Protons With Energies of
8.7 Bev in Photographic Emulsions

SOV/56-37-3-6/62

$> 5^\circ$, and 750 ± 150 cm if it is between 1 and 5° . In consideration of the degree of efficiency of recording, 500 ± 100 cm is obtained. If in the former case all error sources are taken into account, $\lambda_{\text{inelast}} = 34 \pm 2$ cm is obtained, and the geometric total cross section of all photographic emulsion nuclei may be estimated at $\sigma_{\text{geom}} = \pi \cdot (1.38 \cdot 10^{-13} \text{ cm})^2 A^{2/3}$. The second part of the paper deals with the distribution of stars according to the number of fast and slow particles. The number of "pure" charge exchange interactions (proton-neutron) without any considerable energy loss was low (3%, i.e. 17 among 520 stars). The distribution of stars over various kinds is shown by the diagram of figures 1-3. Chapter 3 describes results concerning the angular distribution of fast and slow particles (Figs 4-8), and the following chapter deals with the results of the analysis of angular distribution curves of the various types of stars. Several conclusions are drawn after comparing the results obtained with calculations based upon the statistical theory. Thus, conclusions are drawn as to the existence of interactions of the peripheral kind (nucleon-nucleon), as about 25% of the

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Nuclear Interactions of Protons With Energies of
8-9 BeV in Photographic Emulsions

SOV/56-37-3 6/62

interactions with emulsion nuclei with respect to angular distribution and to the average multiplicity of the production of fast particles corresponds to the nucleon-nucleon interaction (according to the statistical theory). The angular distribution of the "gray" tracks depends very weakly on the angular distribution of the fast particles and deviates somewhat from the distribution prevailing in the case of pion interaction with emulsion nuclei ($E_{\pi} = 1.5$ BeV). It may be assumed in this

case that the occurrence of "gray" particles is due to a considerable extent to the secondary interaction of 1 BeV pions. From the monotonous broadening of angular distributions with growing multiplicity of fast particle production it is possible to draw conclusions as to the nature of the interaction between the primary nucleon and the nucleons in a composite nucleus. The authors finally thank Academician V. I. Veksler for making irradiation on the synchrophasotron possible and they further thank the collaborators of the OIYAI M. I. Podgoretskiy, I. M. Gramenitskiy, K. D. Tolstov, and R. M. Lebedev for discussions, the younger scientific collaborator of the FIAN (Institute

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Nuclear Interactions of Protons With Energies of
8.7 Bev in Photographic Emulsions

SOV/56-37-3-6/62

of Physics AS USSR) Ye. A. Zamchalova for her assistance, and
further also Professor N. A. Dobrotin, I. L. Rozental', D. S.
Chernavskiy, and N. G. Birger for their advice and discussions.
There are 10 figures, 8 tables, and 11 references, 5 of which
are Soviet.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy of
Sciences, USSR)

SUBMITTED: April 4, 1959

Card 4/4

ALEKSEYEVA, K.I.; ZHDANOV, G.B.; ZAMCHALOVA, Ye.A.; TRET'YAKOVA, M.I.;
SHCHERBAKOVA, M.H.

Study by the photographic emulsion method of the interaction
between 8.7 Bev protons and quasi-free nucleons. Zhur. eksp.
i teor. fiz. 40 no.6:1625-1637 Je '61. (MIRA 14:8)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR.
(Photography, Particle track)
(Protons)
(Nucleons)

ALEKSEYEVA, K. I., ZHDANOV, G. B., TRETYAKOVA, M. I., TSYTOVICH, V. N., and
SHCHERBAKOVA, M.-N.

"Ionization momentum dependence for electrons in the ultra-relativistic region"

Fourth International Colloquium on Photography (Corpuscular) - Munich, West
Germany, 3-8 Sep 62

S/560/62/000/012/001/014
1046/1246

AUTHORS: Alekseyeva, M.I., Gabuniya, L.L., Zhdanov, G.B., Zamchalova, Ye.A.,
Shcherbakova, M.N. and Tret'yakova, K.I.

TITLE: Investigation of the primary cosmic radiation composition at an
altitude of 320 km

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli, no. 12, Moscow,
1962, 6-15

TEXT: The automatic apparatus whose design was reported at the International Conference on Nuclear Photography (1960) is applied to impulse and ionization measurements of middle-weight cosmic nuclei. In multiple scattering measurements, the time required to measure one 10 mm trail is 7 minutes; in ionization measurements, 30 minutes per trail are required. This is at least 5 times as fast as in visual measurements. The resolution of the apparatus in ordinary circumstances is sufficient to separate between the Li, Be, B and C, N, O groups. Instrumental errors, however, reduce the accuracy of measuring trail discontinuities by u_1 to 30-40% as compared with visual measurements for a given

Card 1/2

Investigation of the primary cosmic radiation...

trail length. There are 10 figures and 1 table.

SUBMITTED: August 15, 1961

Card 2/2

S/056/62/043/001/051/056
3102/3104

AUTHORS: Shdanov, G. B., Tret'yakova, M. I., Tsytovich, V. N.,
Shcherbakova, M. N.

TITLE: The ionization losses of ultrarelativistic electrons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 1(7), 1962, 342-345

ABSTRACT: Up to now the ionization losses of fast charged particles have been considered in first perturbation-theoretical approximation only. The contribution of the next order, i. e. that of the radiation corrections, is comparable with the effect of a relativistic increase of the ionization losses. Theoretical estimates of these corrections are here compared with experimental results. It is shown that in real cases, if

$\Delta^{1/2} \ll (\pi^2 c / e^2)^{1/2}$, the correction may be given approximately by $2 \ln \xi$, where ξ is a function of the total electron concentration in the medium and the corresponding frequencies; $\Delta = \Delta_\infty$. For a photo-

Card 1/2

The ionization losses of ...

S/056/62/043/001/051/056
B102/B104

Emulsion (AgBr) δ^{-1} is between 100 and 200 and the radiation correction remains 8-10%. The relative track densities, measured in $\mu\text{g}/\text{cm}^2 - \bar{P}$ (KODAK-R) emulsions and for 8.7-Bev protons (OIIYaI) and Ilford G-5 and 10-Bev protons (GERN) as dependent on $\epsilon_p/mc^2 \gg 1/\epsilon$, are compared with theoretical curves both with and without radiation correction. The uncorrected agrees satisfactorily with the experimental data. There are 2 figures.

SUBMITTED: May 12, 1962

Card 2/2

ALEKSEYEVA, K.I.; GABUNIYA, L.L.; ZHDANOV, G.B.; ZAMCHALOVA, Ye.A.;
SHCHERBAKOVA, M.N.; TRET'YAKOVA, M.I.

Study of the composition of the primary cosmic radiation at
an altitude of 320 km. Isk.sput.Zem. no.12:6-15 '62. (MIRA 15:8)

(Cosmic rays)

ZHDANOV, G.B.; TRET'YAKOVA, M.I.; TSYTOVICH, V.N.; SHCHERBAKOVA, M.N.

Ionization loss of ultrarelativistic electrons. Zhur. eksp. i teor.
fiz. 43 no.1:342-345 J1 '62. (MIRA 15:9)
(Electrons) (Ionization)

L 13646-63 EWT(1)/BDS/ES(w)-2 AFFTC/ASD/ESD-3/SSD Pub-4
 ACCESSION NR: AP3003112 S/0056/63/044/006/1864/1868 68

AUTHOR: Alekseyeva, K. I.; Zhdanov, G. B.; Tret'yakova, M. I.; Shcherbakova, M. N. 63

TITLE: ^q Ionization-momentum relation for various particles in the relativistic region

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1864-1868

TOPIC TAGS: ionization-momentum relation, relativistic particles, electrons, protons, pions

ABSTRACT: New data have been obtained on the momentum dependence of the blob density along the tracks of electrons in the 50 MeV/c -- 5 GeV/c momentum range (Ilford G-5 and NIKFI-R emulsions) and of protons and pions in the 1.5--19 and 0.3--6 GeV/c range, respectively (Ilford G-5 emulsion). The experiments were aimed at further tests on the theoretical interpretation given for this effect previously by the authors (ZhETF v. 43, 342, 1962 and Report at the Fourth Intl. Nuclear Photography Colloquium, Munich, 1962). Pellicles of both makes of emulsions were irradiated by 19.6 GeV/c protons. The pion and proton tracks were selected from stars produced by primary protons on the emulsion nuclei, while the

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ACCESSION NR: AP3003112

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electron tracks were selected from electron-positron pairs produced by photons from pion decay in the same interactions. The results confirm the conclusion previously arrived at by the authors that for momenta larger than 200 mc sup 2 a drop is observed in the ionization-momentum curve instead of the plateau predicted by the earlier theory. This drop is in agreement with calculations that take radiative corrections into account. "In conclusion the authors would like to thank Dr. W. Lock and Dr. J. Combe for help in obtaining irradiated emulsions from CERN, and laboratory assistants A. S. Kolyadin, L. A. Krupetskov, N. A. Sobolev, and M. V. Tyurin who carried out the main part of the measurements on the particle tracks." Orig. art. has: 4 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute Academy of Sciences, SSSR)

SUBMITTED: 26Jan63 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 004

Card 2/2

SHCHERBAKOVA, M.N.

Chromatographic separation of the essential oil of Schisandra chinensis. Aptech. delo 12 no.3:27-30 My-Je'63 (MIRA 17:2)

1. Farmatsevticheskiy fakul'tet I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

Результаты исследования спектров β -квантов.

Фин. структура of the energy spectrum of β -quanta generated by
18.7 GeV. protons on photoemission raster. Zhur. eksp. i teor.
fiz. 47 no.5:1664-1667 1964.

(MIRA 18:2)

1. Fizicheskii institut imeni P.I. Lebedeva AN SSSR.

SHCHERBASKOVA, N.N.

Thin layer chromatography of nitrogen-containing drugs. Report No.1.
Apt. delo 13 no.5:41-44 S-O '64. (MIRA 12:3)

1. I Moskovskiy ordena Lenina meditsinskiy insitut imeni Sechenova.

ACC NR: AP6031435 SOURCE CODE: UR/0056/66/051/002/0417/0427

AUTHOR: Galstyan, D. A. ; Zhdanov, G. B. ; Tret'yakova, M. I. ; Shcherbakova, M. N. ; Chernyavskiy, M. M. 20
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B

ORG: Physics Institut, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

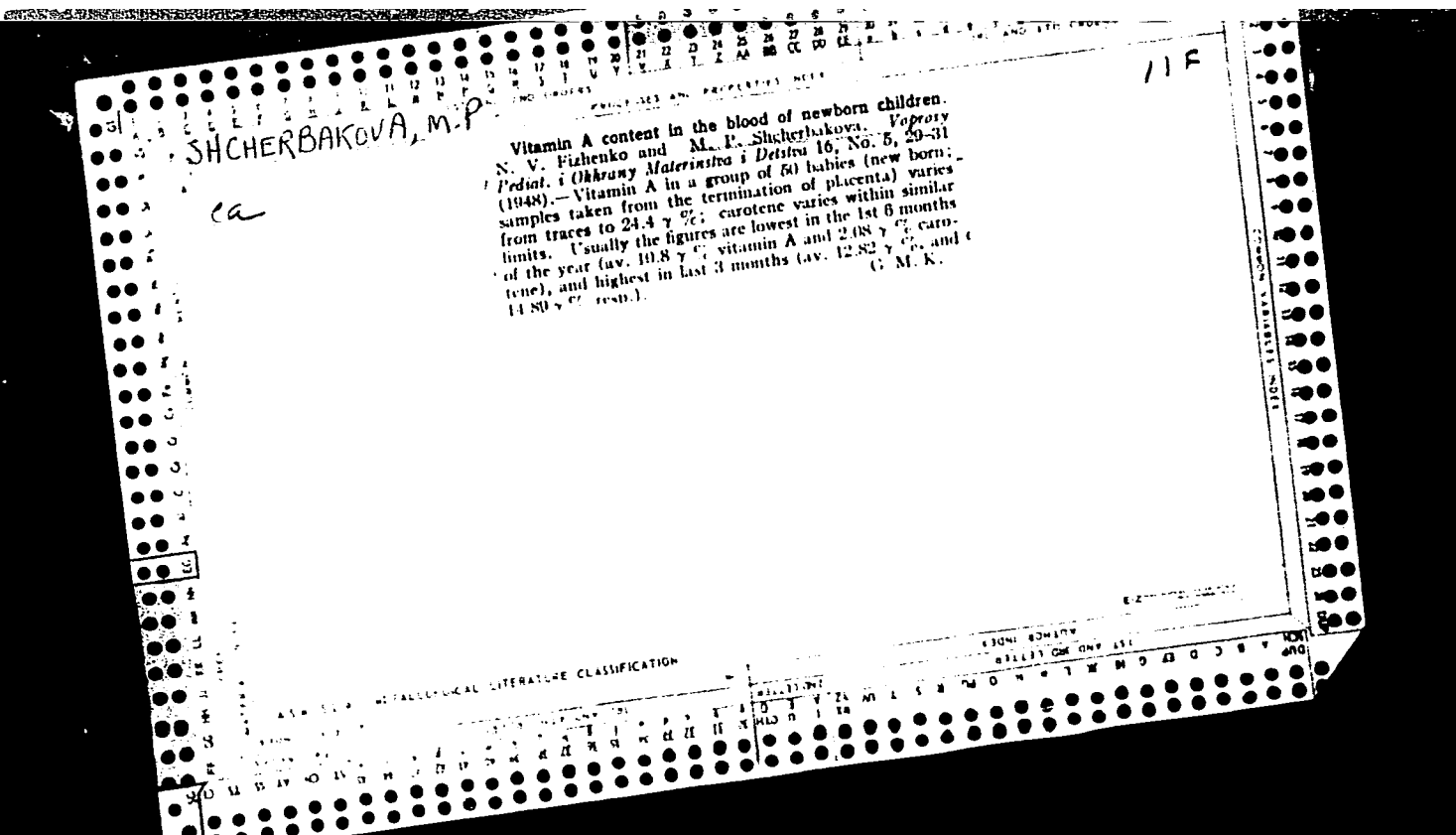
TITLE: Quasi-nucleon interactions between 24 Bev/sec protons and nuclei of a photographic emulsion in a strong magnetic field 19

SOURCE: Zh eksper i teor fiz, v. 51, no. 2, 1966, 417-427

TOPIC TAGS: nucleon interaction, proton, magnetic field, photographic emulsion, meson, angular distribution, spectral energy distribution

ABSTRACT: Quasi-nucleon interactions of 24 Bev/sec protons have been investigated by the method of photographic emulsion in a pulsed 180-oe magnetic field. In addition to complete information relating to all charged secondary particles (emission angle, momentum, and nature of particle), the total energy of neutral mesons was determined. The separation of peripheral and nonperipheral interactions was carried out with the aid of various criteria. The multiplicity distributions, inelasticity

Cont 1/2



GALLENIN, N.N.; ~~LEBINSKAYA, I.I.~~; ~~SHCHERBAKOVA, M.P.~~

Dynamics in the change of the content of several B vitamins in the blood of small children according to various methods of administration. *Pediatrics* no. 7.30-38 31 '59. (MIRA 10:10)

1. Iz biokhimicheskoy laboratorii i iz kliniki rannego detstva Leningradskogo nauchno-issledovatel'skogo pediatricheskogo instituta (dir. - prof. A.I. Likhov)
(VITAMINS - B)

ZAMORIT, P.K.; MARINICH, A.M.; SHCHERBAKOVA, M.V.

Review of "Geomorphology of the European part of the U.S.S.R."
by M.V. Karandeev. Reviewed by P.K. Zamorit, A.M. Marinich, M.V.
Shcherbakova. Nauch.dokl.vys.shkoly; geol.-geog.nauki no.2:
227-228 '59. (MIRA 12:8)

(Geology, Structural)

SHCHERBAKOVA, M.Ya.; DOIL'NITSYN, Ye.F.; TRUBETSKOY, A.I.

Radiofrequency mass spectrometer with increased resolving power.
Izv. vost. fil. AN SSSR no.9:94-101 '57. (MIRA 11:1)

1. Zapadno-Sibirskiy filial AN SSSR.
(Spectrometer)

Shcherbakova, M.Ya.
USSR/Atomic and Molecular Physics - Gases

D-7

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 817

Author : Doil'nitsyn, Ye.F., Trubetskoy, A.I., Shcherbakova, M.Ya.

Inst : -

Title : Radio Frequency Mass Spectrometer.

Orig Pub : Zh. tekhn. fiziki, 1957, 27, No 2, 404-409

Abstract : The article describes work on the construction and test of a radio frequency mass spectrometer of Bennet (Bennet W.H., Journal of Applied Physics, 1950, 21, 143) for gas analysis of a mixture of light and inert gases.

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CARD 2/2

PA - 2521

Resolving Power Calculation and Cycle Selection of 3-stage Radio-frequency Mass-Spectrometer.

in order that the energy of the ions the mass M_0 , when passing through the analyzer, may increase to a maximum. a_1 and a_2 are the distances between the stages and n and m are whole numbers. Now the formula for the magnitude of the reactivity is deduced from which we can see that it depends on the level of the slowing-down potential U_{s2} , on n , m and $(n + m)$, which determine the total length of the tube, as well as on the ratio of the cycles (n and m). In order to avoid that the modulation function has additional maxima the optimum selection of the cycles for the first and second drift/sperce, i.e. where n and m the harmonic vibrations are minima, is investigated. It is shown that such a combination of n and m exists for each $(n + m)$ value for which, the necessary level of the slowing-down potential

$\frac{U_{s2}}{6.15 U_f}$ will be smallest, U_f denotes the effective amplitude

value of high frequency. Since, however this quantity also increases with the increase of the number $(n+m)$, this leads to a limitation of the possibilities of the construction investigated. (With 3 illustrations)

ASSOCIATION: Geological Mining Institute, Novosibirsk.

PRESENTED BY: -

SUBMITTED: 13.7. 1956.

AVAILABLE: Library of Congress.

DOIL'NITSYN, Ye.F.; TRUBETSKOY, A.I.; SHCHERBAKOVA, M.Ya.

Testing a radio-frequency mass spectrometer adjusted for the second
maximum of stage selectivity. Izv.Sib.otd. AN SSSR no.9:136-138 '58.
(MIRA 11:11)

(Mass spectrometry)

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PHASE I BOOK EXPLOITATION

SOV/3396

Vorsin, Aleksandr Nikolayevich, Yevgeniy Fedorovich Doil'nitsyn,
Anatoliy Yustinovich Trubetskoy, and Mira Yakovlevna Shcherbakova

Radiochastotnyy mass-spektrometr; teoriya, raschet i konstruirovaniye
(Radio-Frequency Mass Spectrometer; Theory, Design, and Construc-
tion) Moscow, Izd-vo AN SSSR, 1959. 74 p. Errata slip inserted.
3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Sibirskoye otdeleniye.
Institut geologii i geofiziki.

Resp. Ed.: V. M. Klyarovskiy; Ed. of Publishing House: A.P. Senchen-
kov; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This monograph is intended for specialists in spectrometry.

COVERAGE: The authors present the results of work done by them
at the Laboratory of Absolute Geological Age of the Institute
of Geology of the West Siberian Branch of the Academy of Sciences,
USSR. They describe a Bennet-type radio-frequency mass-spectro-
meter and outline the theory and calculation in the utilization

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Radio-Frequency Mass Spectrometer (Cont.)

SOV/3396

of various forms of a high-frequency signal. The spectrometer was built at the Laboratory, and the technology of its construction is briefly described, as well as results of testing and tuning the instrument and the selection of operating conditions. The authors are of the opinion that the possibility of building under laboratory conditions, portable mass-spectrometers with known parameters will be of interest to all specialists in this field. The Introduction and Chapter II were written by Y. F. Doil'nitsyn, Chapter I was written by M. Ya. Shcherbakova, and Chapter III by A. Yu. Trubetsky. The whole work was written under the general supervision of A. N. Vorsin. There are 60 references, 11 of which are Soviet (including 2 translations) and the remainder are Canadian, English, French, German and Swiss.

TABLE OF CONTENTS:

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Ch. I. Theory and Design of R-F Mass-Spectrometer	9
1. Construction of an R-F M-S analyzer of a general type using a high-frequency sinusoidal voltage	11
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Radio-Frequency Mass Spectrometer (Cont.)

SOV/3396.

Conclusion

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Bibliography

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AVAILABLE: Library of Congress

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JP/mg
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SOV/120-59-2-23/50

AUTHORS: Doil'mitsyn, Ye.F., Trubetskoy, A.I., and Shcherbakova, M.Ya.

TITLE: A Miniature Radio Frequency Mass Spectrometer
(Miniatyurnyy radiochastotnyy mass-spektrometr)

PERIODICAL: Pribery i tekhnika eksperimenta, 1959, Nr 2,
pp 81-82 (USSR)

ABSTRACT: The RMS-M miniature radio frequency mass spectrometer is described. It is based on theoretical calculations given in Refs 1-7. The height of the spectrometer (Fig 2) is 100 mm and its diameter is 23 mm. The instrument will work in a relatively poor vacuum (10^{-3} mm Hg). The mass M is given by $M = 0.266 U_p / s^2 f^2$ where U_p is the scanning voltage, s is the distance between the grids and f is the frequency in Mc/s. At a working frequency of 10 Mc/s and with $s = 1$ mm the mass is given by $M = 0.266 U_p$. Typical spectra obtained with argon are shown in Figs 4 and 5. The peaks at 28, 40 and 44 are clearly visible ($P = 10^{-3}$ mm Hg).

Card 1/2

SOV/120-59-2-23/50
A Miniature Radio Frequency Mass Spectrometer

There are 5 figures and 7 Soviet references.

ASSOCIATION: Institut geologii i geofiziki Sibirskogo otdeleniya
AN SSSR (Institute of Geology and Geophysics of the
Siberian Branch of the Academy of Sciences of the
USSR)

SUBMITTED: June 20, 1958

Card 2/2

SHCHERBAKOVA, M. YA., CAND PHYS-MATH SCI, "THEORY OF
THE RADIO-FREQUENCY MASS SPECTROMETER." NOVOSIBIRSK, SI-
BERIAN DEPT OF ACAD SCI USSR, 1960. (TOMSK POLYTECH INST
IN S. M. KIROV). (KL, 3-61, 205).

3. CIVIL SERVICE (1947-1954)

1. Director of Civil Service (1947-1954) (1947-1954)

2. Assistant Director of Civil Service (1947-1954) (1947-1954)

L 41836-65 EMT(1)/EMG(v)/FCC/EEC-4/EEC(t)/ENA(h) P1-4/Pe-5/Pe-4/Pq-4/Pae-2/
Feb IJP(c) GW

ACCESSION NR: AP5009649

UR/0293/65/003/002/0309/0314

AUTHOR: Shcherbakova, M. Ya. 31/12

TITLE: Optimal designs of analyzers for a radio-frequency mass-spectrometer 12
with two and three drift spaces

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 2, 1965, 309-314

TOPIC TAGS: radio frequency spectrometer, spectrometer, spectrometer analyzer
design, ion energy calculation, test instrumentation design, drift space

ABSTRACT: The principles of operation and certain design considerations of the RF mass-spectrometer are briefly discussed. The author points out that the design of the analyzer, particularly the number of drift spaces and their reduced lengths, is one of the determining factors in the determination of the resolving power and maximum sensitivity of the instrument. Noting that, for practical purposes, it is of the greatest importance to ensure optimal design parameters for analyzers which will be able to provide a minimum level of harmonics for a given resolution, the author analyzed this problem and calculated the parameters of these analyzers. Using digital methods (with a computer), an investigation was carried out of previously derived ratios of the ion energy increment in the analyzing unit of a radio-frequency mass-spectrometer with two and three drift spaces. Optimal drift
Card 1/2

L 41836-65

ACCESSION NR: AP5009649

length ratios were found. A tabular listing is given, showing design variations of analyzers which may be recommended for practical use. The author discovered, among other things, that it is possible to boost the sensitivity of a radio-frequency mass-spectrometer by switching from a two-drift-space analyzer design to one incorporating three drifts, while at the same time lengthening the analyzer (increasing the sum number of cycles). The additional point is made that, in the final analysis, the selection of the analyzer design for a particular mass-spectrometric problem will naturally depend on the specific requirements made on the RF mass-spectrometer parameters: resolving power, sensitivity, spectral position, etc. The tables given in the article will be helpful in making this selection. Orig. art. has: 2 tables and 5 formulae.

ASSOCIATION: None

SUBMITTED: 16Apr64

ENCL: 00

SUB CODE: AA, *OP*

NO REF SOV: 003

OTHER: 000

orig
Card 2/2

MALINOVSKAYA, T.A.; SHCHERBAKOVA, M.Ye.; YELISEYEVA, G.A.

Increasing the concentration of pastes of highly dispersed pigments with the aid of electroosmosis. Khim. prom. no.2: 100-105 F '63. (MIRA 16:7)

(Pigments) (Electroosmosis)

SHCHERBAKOVA, N., khudozhestvennyy rukovoditel' kluba.

Our university. Mast. ugl. 8 no.7:15 J1 '59. (MIRA 12:10)

1.Chlen orgkomiteta universiteta kul'tury Kuznetskoy shakhty
"Babanakovskaya."
(Kuznetsk Basin--Coal miners)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,
p 66 (USSR) 15-57-1-417

AUTHORS: Marfunin, A. S., Shcherbakova, N. A.

TITLE: The Triad Theory of Twinning, the Triad Method of Identification, and Complex Twinning in Plagioclase (O triadnoy teorii dvoynikov, triadnom metode opredeleniya v kompleksnykh dvoynikakh plagioklazov)

PERIODICAL: Zap. Vses. mineralog. o-va, 1955, Vol 84, Nr 2, pp 242-247.

ABSTRACT: This paper is a review of the monographs of L. A. Vardanyants, published by the Academy of Sciences, Arm SSR in Yerevan: 1) The Triad Theory of Twinning in Minerals, 1950; 2) The Triad Method of Studying Twinned Plagioclase, 1951; and 3) Complex Twinning in Plagioclase, 1952. The method of determining plagioclase, proposed by Vardanyants, is not used as an independent technique. It may be used for studying complex twinning in combination with the Federov method.

Card 1/1

T. B. K.

SHCHERBAKOVA N. A.

18(6)

SCV/20-122-2-15/42

AUTHORS: Makogon, M. B., Panin, V. Ye., Sukhovarov, V. F.,
Abramets, L. P., Korotayev, A. D., Shcherbakova, N. A.

TITLE: On the Role of External Stress in the Weakening During a
Elastic Deformation (O roli vneshnego napryazheniya v
razuprochnenii pri plasticheskoy deformatsii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 219-221
(USSR)

ABSTRACT: It was interesting experimentally to detect a stimulating in-
fluence of external stress on the intensity of recovery im-
mediately during the plastic deformation itself, and to in-
vestigate the influence of the nature of the material and of
the deformation conditions (velocity, temperature) on the
intensity of the recovery. The measurements were carried out
on samples of electrolytic copper and their alloys with Ni,
Al (5; 10; 15 atomic %) and with Zn (5 atomic %). All these
samples ($d = 11.00 \pm 0.01$ mm, $h = 7.00 \pm 0.01$ mm) were de-
formed by compression up to 30 % at room temperature with
an average velocity of 4,3 %/min. The deformations and the
tempering were carried out at various temperatures. A figure

Card 1/3

SOV/20-122-2-15/42

On the Role of External Stress in the Weakening During a Plastic Deformation

shows the curves of the flowing for one of the investigated alloys. According to these curves, the stress weakens the samples so intensely that resistance against deformation is diminished by this deformation. If the temperature of the deformation increases, the decrease of the resistance becomes more noticeable. If other conditions are equal, this decrease is more intense for the alloys of the systems Cu-Al, Cu-Zn than for the alloys of the system Cu-Ni. The curves of the third contraction of the samples tempered after a cold deformation are always higher than the curves of samples which were deformed at the temperature of the first series of samples. The plastic deformation, therefore, caused an additional weakening. The nature of the alloy has no influence on the value of the relaxation coefficient K , if the percentage of the admixture is lower than 5 %. However, for higher percentages of admixture, this influence is well noticeable. The alloys of the system Cu-Al relaxate noticeably more intensely than the corresponding alloys of the system Cu-Ni. The results of this paper are an experimental proof of the weakening caused by the deformation and of the stimulating influence of the external stress on the intensity of this weakening.

Card 2/3

SOV/20-122-2-15/42

On the Rôle of External Stress in the Weakening During a Plastic Deformation

Weakening depends on the conditions of the deformation (temperature, velocity) and on the nature of the deformed alloy. There are 2 figures, 1 table, and 14 references, 12 of which are Soviet.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskii nauchno-issledovatel'skiy Institut pri Tomskom gosudarstvennom universitete im. V. V. Kuybysheva
(~~Siberian~~ Physical-Technical Scientific Research Institute at Tomsk State University imeni V. V. Kuybyshev)

PRESENTED: May 7, 1958, by G. V. Kurdyumov, Academician

SUBMITTED: April 20, 1958

Card 3/3

SHCHERBAKOVA, N.A., studentka; STEKOL'NIKOV, I.S., prof., doktor

Model study of the channel stage current in a long spark. Izv.
TPI 95:72-79 '58. (MIRA 14:9)
(Electric spark--Electromechanical analogies)

SHCHERBAKOVA, N.A.

Anagashanskiy massif of basic and ultrabasic rocks in eastern
Transbaikalia. Izv.vys.ucheb.zav.; geol. i razv. 4 no.11:37-53
N '61. (MIRA 15:2)

1. Moskovskiy institut tsvetnykh metallov i zolota imeni M.I.
Kalinina.

(Transbaikalia--Rocks, Igneous)

STRELYUKHIN, A.K., prof., SHELEST, Ye.N.; SHCHEPBAKOVA, N.I.; GRIGOR'YEV,
V.I., MAROCHKIN, V.V.

Examination of the higher nervous activity in workers of the
carbon disulfide department of the Ryazan Combine of Artificial
Fibers. Nauch. trudy Riaz.med.inst. 23:97-103 '63.

(MIRA 18:12)

1. Kafedra psikhiiatrii (zav. kafedroy - prof. A.K.Strelyukhin)
Ryazanskogo meditsinskogo instituta imeni akademika I.P.
Pavlova

USSR / Virology--Plant Viruses

E

Abs Jour: Ref Zhur-Biologiya, No 21, 1958, 94830

Author : Kameraz, A. Ya., Shcherbakova, N. I.

Inst : Not given

Title : S Virus and Results of Its Determination by Serological Method in Potato Leaves

Orig Pub: Vestn. s.-kh. nauki, No 12, 93-100, 1958

Abstract: Described is the Van Slogteren "micro-reaction" method, somewhat changed by the authors, for the serological diagnosis of potato S-virus. By means of this reaction, S-virus was found in potato plants of different varieties with the exception of the Vyrypayevskiy, Kameraz No 1, Lorkh,

Card 1/2

SHOHERBAKOVA, N. I.: Master Med Sci (diss) -- "The bioelectrical activity of the cerebral cortex as a method of indication and counterindication for the use of EST (unidentified) in the catatonic form of schizophrenia and involutional depression". Ryazan', 1958. 16 pp (Ryazan' Med Inst im Acad I. P. Pavlov, Chair of Psychiatry), 200 copies (KL, No 6, 1959, 147)

SOV/137-58-10-21523

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 152 (USSR)

AUTHORS: Makogon, M. B., Panin, V. Ye., Kitayeva, L. P., Korotayev, A. D., Sukhovarov, V. F., Shcherbakova, N. I.

TITLE: The Effect of Annealing and Intermediate High temperature Deformation on Compression Curves of Copper and its Alloys
(Vliyaniye otzhiga i promezhutochnoy vysokotemperaturnoy deformatsii na krivyye szhatiya medi i yeye sployov)

PERIODICAL: Dokl. 7-y Nauchn. konferentsii, posvyashch. 40 letiyu Velikoy Oktyabr'sk. sots. revolyutsii, Nr 2, Tomsk, Tomskiy un-t, 1957, pp 59-60

ABSTRACT: The effect of plastic deformation (D) on the progress of recovery processes in Cu and its alloys with Ni (5, 10, 15 atom-%), Al (5, 10, 15 atom-%) and Zn (5 atom-%) was investigated. Mechanical properties of metal which had been subjected to deformation at room temperature were compared after the metal had been annealed as well as subjected to slight deformation under identical temperature conditions. It was established that application of stress stimulates the recovery processes; this is manifested by the fact that mechanical

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SOV/137 58 10 21523

•The Effect of Annealing (cont)

properties of work-hardened specimens (S) which have been subsequently subjected to mild deformation at elevated temperatures are lower than the properties of S's which have been annealed only at identical temperatures. A drop in secondary reduction curves of S's which have been preliminarily subjected to deformation at room temperature is observed at elevated temperature. The stimulating effect of loading, which becomes greater with increasing temperatures, begins to diminish as the T_p point is approached and, finally, goes down to zero. It is shown that the D of work hardened S at temperatures beyond the recrystallization threshold contributes to complete relief of work-hardening stress achieved at room temperature and, at the same time, produces new distortions which cannot be completely relieved during D at the given temperature. Compared with pure Cu, other conditions being equal, the intensity of recovery processes under load is lower in the Cu alloys investigated. As the concentration of Ni is increased and the concentration of Al in the Cu alloy is reduced the intensity of recovery diminishes. In alloys with relatively small cohesive bonds (Cu-Al), the recovery processes occur more intensively than in the case of alloys in which the cohesive forces are greater (Cu-Ni)

1. Copper--Heat treatment 2. Copper alloys--Heat treatment
3. Copper--Deformation 4. Copper--Mechanical properties

V. N.

Card 2/2

SHCHERBAKOVA, N. M., Candidate Agric Sci (diss) -- "Methods of determining the seed qualities of potatoes". Leningrad, 1959. 22 pp (All-Union Order of Lenin Acad Agric Sci im V. I. Lenin, All-Union Inst of Plant Growing), 150 copies (KL, No 22, 1959, 119)

L 16098-65 EWT(m) DIAAP
ACCESSION NR: AP5000310

S/0056/64/047/005/1664/1667,

AUTHORS: Zhdanov, G. B.; Tret'yakova, M. I.; Shcherbakova, N. M. ⁹

TITLE: Study of the fine structure of the energy spectrum of Gamma
quanta⁹ produced by protons with energy 18.7 GeV from photographic
emulsion nuclei

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47,
no. 5, 1964, 1664-1667

TOPIC TAGS: gamma source, pion decay, eta meson decay, two photon
decay, gamma ray spectrum

ABSTRACT: The purpose of the investigation was to ascertain whether
there exists an additional source of γ quanta in nuclear interac-
tions with energies of several GeV, other than π^0 -meson decay. To
this end, the electron-pair spectrum was analyzed in Ilford-G5
emulsions exposed to a beam of 19.6 GeV/c protons, in the energy

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L 16098-65

ACCESSION NR: AP5000310

interval 140--950 MeV. On the basis of a statistical sample of 222 electron-positron pairs, it is concluded that the spectrum contains no peaks capable of attributing the two-photon decay of η mesons to sufficiently intense processes, in a manner similar to that which was done by various experimenters at lower primary-particle energies. There are therefore no grounds as yet for stating with any assurance that an additional mechanism of γ -quantum generation exists. "The authors thank W. O. Locke and J. C. Combe for obtaining exposed emulsions from CERN, and M. I. Podgoretskiy for a discussion of our data." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 18May64

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 002

Card 2/2

KOMOV, O.P., SHCHERBAKOVA, N.P.

Effect of penicillin therapy on the dynamics of the serum
reaction in syphilis. Sbor.nauch.rab.Bel.nauch.-issl.kozhno-ven.
inst. 4:209-211 '54 (MIRA 11:7)
(SYPHILIS)
(PENICILLIN)

2. *Metallurgiya* No. 4.

Methods of Investigating Metallic Structures with the Aid of the Electron Microscope. D. S. Shraiber, G. K. Molchanova, and N. S. Shcherbakova. (*Zavodskaya Laboratoriya*, 1950, 16, (11)-132-1330). [In Russian]. This is a general review of the application of electron-microscopic methods to metallography. After enumerating the metallographic applications, an account is given of electrolytic polishing and etching, and of the preparation of surface replicas. Some photomicrographs at 15,000 diameters are shown.—S. K.

M

L 40562-65 EWG(j)/EWP(e)/EWT(m)/EPT(c)/EWP(i)/EPR/EWP(j)/EWP(b)
 Pc-4/Pr-4/PS-4 WW/GS/RM/WH
 ACCESSION NR: AT5004103 S/0000/64/000/000/0174/0176

AUTHOR: Shcherbakova, N. S.

TITLE: Vulcanizates with improved wear resistance

SOURCE: Nauchno-tekhnicheskoye soveshchaniye po friktsionnomu iznosu rezin. Moscow, 1961. Friksionnyy iznos rezin (Frictional wear of rubber); sbornik statey. Moscow, Izd-vo Khimiya, 1964, 174-176

TOPIC TAGS: synthetic rubber, rubber wear, frictional wear, vulcanizate wear resistance, butadiene acrylonitrile rubber, graphite filler, brake fluid

ABSTRACT: The author studied the improvement in thermal and wear properties of butadiene-acrylonitrile copolymers after addition of 20% pencil graphite. The specimens, prepared under commercial conditions from SKN-18, SKN-26 and SKN-40 (copolymers with 17-10, 27-30, and 36-40% acrylonitrile) were tested for thermal properties, up to 600 hrs. friction against steel under 5 kg/cm² at 60-100C and the action of brake fluid AMG-10, and in AMG-10 environments for up to 240 hrs. for the temperature of the friction zone and wear at 150C. The graphitized resin showed higher heat conductivity, lower coefficients of friction, a lower thermal effect of friction, and lower and more constant wear resistance, while the wear of

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L 40562-65

ACCESSION NR: AT5004103

non-graphitized resin increased with time. The materials are used for seals and packings on moving parts. Sleeves of conventional material of similar composition but without graphite lost their sealing capacity after 25 hrs., whereas graphitized resins were tested for 250-300 hrs. Testing of pencil graphite compositions with other rubber vulcanizates under simulated service conditions is recommended. The study was carried out in cooperation with the NIIRP. Orig. art. has: 1 table and 3 figures.

ASSOCIATION: None

SUBMITTED: 05Aug64

ENCL: 00

SUB CODE: MT

NO REF SOV: 000

OTHER: 000

Card 2/2

392

FUNT, Ye.A., kand.tekhn.nauk; SHCHERBAKOVA, N.V., inzh.; BLOSHENKO, I.K.,
inzh.

Performance of the steel arch supports made from shaped sections
in Donets Basin mines. Ugol' Ukr. 5 no.4:27 Ap '61.

(MIRA 14:4)

(Donets Basin--Mine timbering)

TATOMIR, K.I.; FUNT, Ye.A.; BLOSHENKO, I.K.; SHCHERBAKOVA, N.V.

Cost of supporting development workings in the Donets Basin.
Trudy Inst.gor.dela AN USSR no.11:106-111 '62. (MIRA 16:2)
(Donets Basin--Mine timbering--Costs)

PYATKIN, A.M., kand.tekhn.nauk; BOYKO, S.M., inzh.; SHCHERBAKOVA, N.V., inzh.

Dynamics of the technical and economic indices of reorganized
Donets Basin mines. Ugol' Ukr. 7 no.11:30-32 N '63.

(MIRA 17:4)

1. Institut gornoy mekhaniki i tekhnicheskoy kibernetiki.

I. 6613-65 EWT(m)/BPF(c)/BWP(j)/T Pe-4/Pr-4 RM

ACCESSION NR: AP4040543

S/0064/64/000/006/0419/0420

52

AUTHOR: Shcherbakova, N. V.; Sobolev, V. M.; Shmarlin, V. S.

TITLE: Purifying isoprene with aqueous maleic acid solutions

SOURCE: Khimicheskaya promyshlennost', no. 6, 1964, 419-420

TOPIC TAGS: isoprene, purification, cyclopentadiene removal, stereospecific polymerization, cyclopentadiene maleic acid adduct, isoprene maleic acid adduct, endomethylenetetrahydrophthalic acid, purification process

ABSTRACT: The cyclopentadiene (CPD) content in isoprene used in stereospecific polymerization must be reduced to less than 0.0005%. The method developed for purifying isoprene of CPD is based on reacting CPD with maleic acid in a heterogeneous system of an aqueous solution of maleic acid and isoprene to form 3,6-endomethylene-1,2,3,6-tetrahydrophthalic acid. Isoprene will also react, but less readily, with maleic acid to form 4-methyl-1,2,3,6-tetrahydrophthalic acid; this material accumulates in the aqueous phase. Increasing the temperature (temperature coefficient is 1.54), the concentration of the acid solution and the ratio of the water: hydrocarbon phases, increases the rate of reaction. However, the rate of

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L 6613-65

ACCESSION NR: AP4040543

mixing the phases has the greatest effect on the process rate; increasing the intensity of agitation reduces the time required for purification from 8.4 minutes when shaking the flask to 0.029 minutes when subjected to the action of a centrifugal pump. The CPD-maleic acid adduct is insoluble in isoprene, and at 10-40C its solubility in the aqueous maleic acid (about 25%) solution is 1-4%. The acid solution may be reused until saturated with the adduct, which may then be precipitated so that the solution may be recycled. Orig. art. has: 2 tables and 3 figures.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: LC

NO REF SOV: 000

OTHER: 000

Card 2/2

S/080/63/036/002/014/019
D403/D307

AUTHORS: Sobolev, V. M., Shcherbakova, N. V. and Shmarlin, V. S.

TITLE: Formation of cyclopentadiene during the preparation of isoprene by 2-stage dehydrogenation of isopentane

PERIODICAL: Zhurnal prikladnoy khimii, v.36, no. 2, 1963, 428-430

TEXT: The authors studied (1) the formation of cyclopentadiene (I) in the dehydrogenation of isopentane through iscamylene to isoprene, and (2) the separation of isopentane-isoamylene and isoamylene-isoprene fraction. The K-5 and K-16 (K-5 and K-16) catalysts were used for the 1st and 2nd stage respectively for the dehydrogenation reactions. Cyclopentadiene was found to form during both stages. It is suggested that I forms by the following steps: (a) isopentane isomerizes to n-pentane, some of which is then cyclized to cyclopentane and some dehydrogenated to $\text{CH}_3(\text{CH}_2)_2\text{CH}=\text{CH}_2$; (b) the latter cyclizes to $\text{CH}_3(\text{CH}_2)_2\text{CH}=\text{CH}$ (II) and dehydrogenates to $\text{CH}_3\cdot\text{CH}=\text{CH}\cdot\text{CH}=\text{CH}_2$; cyclopentane also dehydrogenates to II; (c)

Card 1/2

Formation of cyclopentadiene ...

S/080/63/036/002/014/019
D403/D307

product II finally dehydrogenates to I, which is also obtained by the cyclization of $\text{CH}_3\text{.CH=CH.CH=CH}_2$ with loss of H_2 . During the separation of isopentane-isoamylene mixtures, I is found in isoamylene. During the separation of isoamylene-isoprene mixtures, I passes into the isoprene. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers for Synthetic Rubber)

SUBMITTED: November 3, 1961

Card 2/2

L 60982-65 EPF(c)/EWP(j)/EWT(m) Pc-4/Pr-4 RM

ACCESSION NR: AP5018370

UR/0064/65/000/007/0495/0497
661.715.352:66.067.84

AUTHORS: ^{44,55} Shcherbakova, N. V.; ^{44,55} Basner, M. Ye.; ^{44,55} Sobolev, V. M. 33
B

TITLE: Removal of cyclopentadiene from isoprene by maleic anhydride solution

SOURCE: Khimicheskaya promyshlennost', no. 7, 1965, 495-497

TOPIC TAGS: organic chemistry, ^{44,55} synthetic rubber, maleic anhydride, isoprene

ABSTRACT: A method was developed for the removal of cyclopentadiene from isoprene. The method is based on the reaction of cyclopentadiene with maleic anhydride according to the Diels-Alder reaction (I), and on the reaction of maleic anhydride, introduced into isoprene in a dimethyl formamide solution, with isoprene (II). The optimum conditions of purification ensuring a minimum consumption of maleic anhydride and isoprene for the side reaction were determined, and the velocity constants of the two reactions were calculated. The kinetic equations are given. The kinetic curves showing the variation in the cyclopentadiene content in isoprene at different maleic anhydride concentrations and at different temperatures are plotted. The temperature coefficient for reaction (I) is equal to 1.7, that of reaction (II) is 21; with increasing temperature the rate of the first

Card 1/2

L 60982-65

ACCESSION NR: AP5018370

reaction increases more slowly than the rate of the second reaction. The equations obtained permit choosing the optimum parameters of purification. If the permissible final cyclopentadiene content in isoprene is 0.0003% (0.309×10^{-4} mole/l), the appropriate contact time is 60 min and the temperature is 30C. From the known initial amount of cyclopentadiene in isoprene the amount of maleic anhydride necessary for obtaining the desired degree of purification is calculated. The equations given here can be used without introducing great errors for a cyclopentadiene content below 0.5% and at a concentration of maleic anhydride in dimethyl formamide of 25-30%. The procedure for industrial conditions is described. It is technologically simple, excludes the use of inflammable substances, and results in an isoprene of the desired purity. Orig. art. has: 4 graphs and 7 formulas.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MT, GC

NO REF SOV: 000

OTHER: 000

Card ^{mb} 2/2

BUFETOV, V.; SHCHERBAKOVA, O.

Automatic regulation and remote control of temperature in the cooking of sausage products. *Mais.ind. SSSR* 34 no.1:28-32 '63. (MIRA 16:4)

1. *Proyektno-tekhnologicheskii i nauchno-issledovatel'skiy institut Yaroslavskogo soveta narodnogo khozyaystva.*
(Meat industry) (Temperature regulators)

SHCHERBAKOVA, O.

A technical institution of higher learning. Prom.koop. 13
no.12:33 D '59. (MIRA 13:4)

1.Zaveduyushchaya tekhnicheskim kabineton Doma kul'tury
promkooperatsii, Leningrad.
(Leningrad--Universities and colleges)

KAMINSKIY, L.; VASIL'YEV, I.; SHCHERBAKOVA, O., neshtatnyy korrespondent
(Leningrad); NAGAYTSEVA, Z.

Quality, economy, culture. Mest.prom.i khud.promys. 4 no.2:2-6
F '63. (MIRA 16:2)

1. Starshiy inzhener upravleniya bytovogo obsluzhivaniya Gosu-
darstvennogo komiteta Soveta Ministrov RSFSR po delam mestnoy
promyshlennosti i khoduzhestvennykh promyslov (for Nagaytseva).

SHCHERBAKOVA, Ol'ga Aleksandrovna; MEDIKOV, V. M., red.

[Forms and methods of work in technological information and propaganda at small enterprises; work practices of enterprises under the direction of the executive committee of the Leningrad City Soviet. Materials of a short-term seminar on "Technological information and propaganda at small enterprises"] Formy i metody raboty po tekhnicheskoi informatsii i propagande na malom predpriatii; opyt raboty predpriatii upravleniia bytovogo obsluzhivaniia ispolkoma Leningradsogo soveta. Materialy kratkotsrochnogo seminar "Tekhnicheskaiia informatsiia i propaganda na malom predpriatii." Leningrad, Leningr. Dom nauchno-tekhn. propagandy, 1967. 29 p. (MIRA 17:7)

PLATE, A.F.; SHCHERBAKOVA, O.A.

Some derivatives of bicyclo-(2,2,1)-heptane with a
dichlorocyclopropyl group. Neftekhimiia 3 no.1:35-39
Ja-F '63. (MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Bicycloheptane)
(Cyclopropyl group)

L 16995-63

EWA(b)/EWA(b)/EWT(1)/EWT(m)/BDS Pa-L/Pv-L RM
S/204/63/003/002/005/006

AUTHOR: Plate, A.F. and Shcherbakova, O.A. 68

TITLE: Synthesis of organic chlorine insecticides containing the cyclo-
propane ring 63

PERIODICAL: Neftekhimiya, v. 3, no. 2, 1963, 276-279

TEXT: The purpose of this work was to study further the relationship of the insecticidal activity of the condensation products of hexachlorocyclopentadiene (I) and 1, 1-dichloro-2-alkenylcyclopropane to their structure. A number of new compounds based on I were obtained to explain the effect of chlorine atoms in the cyclopropane ring, as well as of the cyclopropane ring itself on physiological activity. A number of derivatives of hexachlorobicyclo-(2,2,1)-heptene containing the cyclopropane ring were synthesized. During the testing for physiological activity it was found that the substitution of the dichlorocyclopropyl substituent by monochlorocyclopropyl group resulted in no decrease of insecticidal activity. The absence of chlorine atoms in the cyclopropane ring or the absence of the cyclopropane ring with the presence in

Card 1/2

L 16995-63

S/204/63/003/002/005/006

Synthesis of organic chlorine 5

the side chain of two chlorine atoms at a double bond resulted in a 2-3 times decrease of the insecticidal activity of the preparation. An adduct with a spiro atom exhibited hardly any toxicity. "The authors express their deep gratitude to R. A. Shraybman who conducted the physiological tests at the Nauchnyy institut po udobreniyam i insektofungitsidam im. Ya. V. Samoylova (Scientific Institute for Fertilizers and Insectofungicides imeni Ya. V. Samoylov)." The combination scattering spectra were taken in the laboratory of the Komissiya po spektroskopii AN SSSR (Commission for Spectroscopy, Academy of Sciences USSR) by senior scientific worker V. T. Aleksanyan.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 15, 1962

Card 2/2

PLATE, A.F.; SHCHELBAKOVA, G.A.

Isomerization of 1,1-dichloro-2-vinylcyclopropane in the
presence of acid catalysts. Neftekhimiia 3 no.4:507-510
Jl-Ag '63. (MIRA 16:11)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova,
khimicheskii fakul'tet.

ALEKSANYAN, V.T.; SHCHERBAKOVA, O.A.; PLATE, A.F.

Raman spectra of alkyl and alkenyl derivatives of
1,1-dichlorocyclopropane. Dokl. AN SSSR 152 no.3:602-605 5 '63.
(MIRA 16:12)

1. Komissiya po spektroskopii AN SSSR i Moskovskiy gosudarstvennyy
universitet im. M.V.Lomonosova. Predstavleno akademikom B.A.
Kazanskim.

SHCHERBAKOVA, O.I.

Dust control in coal mines in Donbass region. Gig. sanit., Moskva
no. 2:20-24 Feb 1953. (CLML 24:2)

1. Of Donetsk Scientific-Research Institute of Work Physiology.

CHERNOMIR, V. I., KURKOVA, I. A., KURKOVA, N. I., KURKOVA, N. I.,
KURKOVA, N. I., KURKOVA, N. I., KURKOVA, N. I., KURKOVA, N. I.

"The mechanism in workers engaged underground work
in coal mines, and means of its prophylaxis."

Report presented at the 13th All-Union Congress of Hygienists, Epidemiologists
and Infectionists, 1956.

LYUECMUDROV, V. Ye., kand. med. nauk; PESOK, I. N.; SHCHERBAKOVA, O. I.

"Organic" -- circumscribed by the vessels of a single organ --
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Isothermal equilibrium liquid - vapor in the system water -
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KONJVALOV, I., doktor tekhn. nauk. PARFENOV, A. BALANIN, V., kand. tekhn.-
nauk. SPOTERBAROVA, A., kand. tekhn. nauk. BAKUTIN, A.; BALIN, N.

Measures for preventing ice jams on the lesser and greater Northern
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(Northern Dvina River--Ice on rivers, lakes, etc.)

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from Spring Ice Flow ^{at} on Temporary ^{Settling} ~~Refuge~~ Points." Len, 1957.
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Water Transportation), 100 copies (KL, 49-57, 114)

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CHEKHAJEV, A. M. kand. tekhn. nauch. grad. prof.; BALANIN, V. V., kand. tekhn.
nauch. grad. prof.; BECHERDOKOVA, R. I., kand. tekhn. nauk; KOMAROV, N. K.,
prof.

Effect of ice jams in the lower reaches of the Northern
Dvina River on the breaking up of its delta. Trudy LIT
nt. 1984-85. 161. (MIRA 18:11)

CHEKRENEV, A.I., dr. tekhn. nauk, prof.; BALANIN, V.V., kand. tekhn. nauk,
dotsent; SHCHERBAKOVA, R.I., kand. tekhn. nauk; MAKARCHUK, N.Ye,
inzh.

Freezing of the Northern Dvina River in the autumn of 1961 and
the effect of autumn ice jamming on the process of its opening
in 1962. Trudy VNI no. 16866-71 '63 (MIRA 17:7)

KONOVALOV, I.M., prof.; BALANIN, V.V., dots.; BORODKIN, B.S., kand.
tekhn.nauk; SHCHERBAKOVA, R.I., kand.tekhn.nauk

Extending navigation on inland waters and possibilities of
year-round operation. Rech.transp. 18 no.9:33-37 S '59.
(MIRA 13:2)

(Ice on rivers, lakes, etc.) (Ice-breaking vessels)

BALANIN, V.V., kand.tekhn.nauk; SHCHERBAKOVA, R.I., kand.tekhn.nauk

Discussing the effect of ice on navigational waterways at the
19th International Shipping Congress. Rech.transp. 18 no.11:
34-36 N 59. (MIRA 13:4)

(Ice on rivers, lakes, etc.)

(Inland navigation)

TUGARINOV, A. I.; SHCHERBAKOVA, R. N.; BEDRINOV, V. P.

Isotopic composition of lead in lead ores of the Dniester Valley.
Geokhimiia no.4:298-304 '60. (MIRA 13:10)

I. V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry,
Academy of Sciences, U.S.S.R., Moscow.
(Dniester Valley—Lead—Isotopes)

L 14719-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6004198

(A) SOURCE CODE: JR/0069/66/028/001/0039/0045

AUTHORS: Zatsepina, T. I.; Trapeznikov, A. A.; Shcherbakova, R. N.

ORG: Institute for Physical Chemistry, AN SSSR Moscow (Institut fizicheskoy khimii AN SSSR)

TITLE: Rheological properties of low-molecular polymethylsiloxane polymer and of pastes derived from it

SOURCE: Kolloidnyy zhurnal, v. 28, no. 1, 1966, 39-45

TOPIC TAGS: silicon compound, siloxane, polymer, rubber, synthetic rubber, polymer rheology, rheologic property

ABSTRACT: The rheological properties of low-molecular weight ($M = 37\ 000$) polymethyl siloxane polymer and of white carbon-black (BS-280) pastes derived from it were studied. The experimental procedure was described by A. A. Trapeznikov, (Kolloidn. zh., 21, 108, 1959). The dependence of the tensile strength and viscosity of the polymer and pastes as a function of the white carbon-black filler concentration was determined. The experimental results are presented in graphs and tables (see Fig. 1). It was found that in the deformation velocity interval $\dot{\epsilon}$ of $0.17 - 170\ \text{sec}^{-1}$, the polymer behaved as a Newtonian liquid. Introduction of filler, up to 20 wt percent, leads to formation of suspensions, the properties of which are

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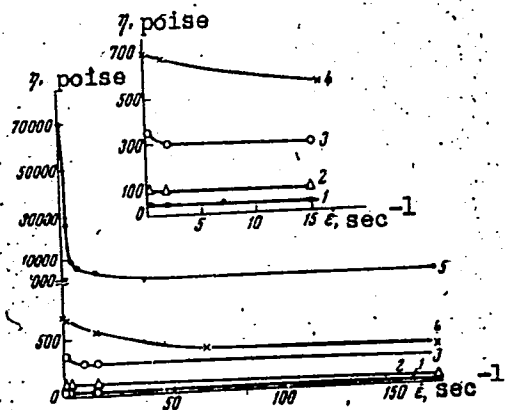


Fig. 1. Dependence of $\eta - \dot{\epsilon}$ for the polymer (1) paste with 5 (2), 10 (3), and 20 (5) parts of BS-280 per 100 parts of polymer SKTN (low-molecular weight rubber).

similar to those of the polymer. The addition of larger amounts of filler causes the formation of thixotropic pastes exhibiting viscosity anomalies and weak tensile properties. It is concluded from electron-microscopy studies that the filler particles attain a maximum size of 200Å and are randomly dispersed throughout the system. Thanks are given to Z. N. Shulyak (VNIISHP) for kindly supplying the samples of white carbon-black. Orig. art. has: 3 tables and 7 graphs.

SUB CODE: 11/ SUBM DATE: 020ct64/ ORIG REF: 004/ OTH REF: 005

Card 2/2 FW

TRAPEZNIKOV, A.A.; SHCHERBAKOVA, I.N.

Effect of the additions of surface-active substances on the structural strength of pigment - binder pastes. Zhur. fiz. khim. 38 no.2, 512-514 F 64. (MIRA 17:8)

1. Institut fizicheskoy khimii AN SSSR.

L 32690-65 EPF(c)/EPR/EPA(w)-2/EWP(j)/EWT(m)/T/EWP(v) Pc-4/Pr-4/Ps-4/

Pab-10 RM/RWH/WW

ACCESSION NR: AP5004205

S/0020/65/160/001/0174/0177

AUTHORS: Trapeznikov, A. A.; Zatssepina, T. I.; Gracheva, T. A.; Shcherbakova, R. N.; Ogarev, V. A.

TITLE: Monolayer of polydimethylsiloxane polymers. Rheological properties and microstructure of pastes with a filler

SOURCE: AN SSSR. Doklady, v. 160, no. 1, 1965, 174-177

TOPIC TAGS: polydimethylsiloxane polymer, trimethylchlorosilane, rheological property, polymer property/ BS 280 white carbon

ABSTRACT: The rheological properties and microstructure of pastes based on polydimethylsiloxane polymers (PMS) were investigated. The two-dimensional pressure F as a function of the area a of the siloxane bond of $\text{SiO}(\text{CH}_3)_2$ monolayers is shown in Fig. 1 on the Enclosure. These results agree with those obtained by H. M. Fox, P. W. Taylor, and W. A. Zisman (Ind. and Eng. Chem., 39, 1401, 1947) although a is somewhat lower than that obtained by Fox. Adsorption of PMS ($M = 2000$) on white carbon BS-280 from hexane at 30C is shown in Fig. 2 on the Enclosure where C_p represents mg of PMS/gram of hexane. The mechanical properties

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ACCESSION NR: AP5004205

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of the pastes and the adsorption depend on the dispersion of the filler and the addition of surface-active agents (SAA). The dispersion process of white carbon (WC) in PMS (M = 37 000) was accompanied by an increased strength to a limiting value of $P_r \approx 100 \text{ gm/cm}^2$ (strength after 1, 5, 10, 20, and 30 passes through the pressure rollers was $P_r = 1.6, 8.0, 13.9, 95.1$ and 100 respectively for 30 parts by weight of WC to 100 PMS). It was found that the WC particle size decreased very slowly, reaching $\approx 200 \text{ \AA}$ after 20-25 passes. The strength of the paste structure (with filler) in a nonpolar liquid (white vaseline) was measured as a function of PMS concentration (M = 37 000) in liquid form at a solid:liquid ratio of 20:80 (by weight) and is shown in Fig. 3 on the Enclosure. The curves exhibit two maxima and minima which were discussed qualitatively. It was felt that the data will be helpful in studying the interactions between PMS and its filler and the behavior of similar polymer and colloidal systems. Orig. art. has: 4 figures.

ASSOCIATION: Institut fizicheskoy khimii, Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 11May64

ENCL: 03

SUB CODE: OC

NO REF SOV: 003

OTHER: 002

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